

OCT 05 2006

Application No. 10/786,759

PATENT AT-000220US / GT 72170-202101/US

**REMARKS / ARGUMENTS**

Reconsideration of this application, as amended, is respectfully requested. The following remarks are responsive to the Office Action mailed July 5, 2006.

All previous claims (1 - 33) have been canceled.

Claims 34 - 45, all new, are pending in the present application. These represent a total of 12 pending claims, numbers 34 and 40 of which are independent claims.

No new matter has been added.

**Claim Rejections - 35 USC 112**

***Re Examiner's Item 2. Claims 1 - 8, 22 - 27, and 29 - 33***

The examiner has rejected these referenced claims with the assertion that they fail the **written description** requirement of the first paragraph of 35 U.S.C. 112 in that the specification does not reasonably convey that the applicants had possession of the invention. More specifically, the examiner asserts that the specification does not describe the step of "making the electronically viewable treatment plan available to a treating professional for review along with an automated teeth collision detection tool to aid e the treating professional in any adjustment of the electronically viewable treatment plan."

All referenced claims have been cancelled; new claims 34 through 46 have been added. The step referenced by the examiner ("making the electronically viewable ....") is not present in any new claims.

***Re Examiner's Item 3. Claims 1 - 8, 22 - 27, and 29 - 33***

The examiner has rejected these referenced claims with the assertion that they fail they fail the **enablement** requirement of first paragraph of 35 U.S.C. 112, more specifically that the specification is not enabling of an "automated teeth collision detection tool."

All referenced claims have been cancelled; new claims 34 through 46 have been added. The element referenced by the examiner ("automated teeth collision detection tool") is not present in any new claims.

*Re New Claims 34 - 46*

New claims have been added that focus on the appliance as a whole being one that both expands the palatal arch and at the same time repositions teeth. Language appearing in independent claims 34 and 40 that was not present in previous claims is supported by the specification. Claims 34 and 40 thus no longer have language from the two clauses of previously presented (now cancelled) claims 1 and 22, reproduced below for reference:

“providing an electronically viewable treatment plan by an appliance provider based on the at least one digital scan, the treatment plan including the use of a custom fit palatal arch expander;  
making the electronically viewable treatment plan available to a treating professional for review along with an automated teeth collision detection tool to aid the treating professional in any adjustment of the electronically viewable treatment plan;”

New claims 34 and 40 have new language, drawn from the specification (as set out below), while other language (as stated above) is identical to that of previous claims 1 and 22. For reference, claim 34 is reproduced below, with the new language underlined for visibility.

34. (New) An arch expander appliance for expanding a palatal arch of a patient while repositioning teeth, the appliance comprising:  
a first portion of the arch expander;  
a second portion of the arch expander;  
the first and second portion each having a plurality of cavities for receiving posterior teeth on one side of the palate and a palatal portion extending toward a centerline of the palate, the plurality of cavities forming a geometry shaped according to at least one digital image that captures at least some of the patient's teeth, the plurality of cavities to receive the patient's posterior teeth, to secure the appliance to the patient, and to resiliently reposition teeth from one tooth arrangement to a successive tooth arrangement;  
an expansion member coupled between the first and second portions, the member to adjust the spacing between the first and second portions on a periodic basis, to expand the palatal arch while repositioning the teeth with a successive arrangement of the plurality of cavities.

The location of support for new language is listed below:

Re: while repositioning teeth: Paragraph 14 has extensive language on repositioning teeth. Such repositioning involves more than the (1) “incremental expansion of individual teeth” as cited in the first sentence, and as occurs by simple expansion of the arch via the arch expanding feature of the invention; it includes as well (2) the resilient repositioning of “teeth from one tooth arrangement to a successive tooth arrangement” through the use of the polymeric shell. The description further elaborates that only some teeth will be repositioned, while others are used for anchoring. Clearly, an individuation of tooth movement is being described, as can

happen only through the intervention of specific geometries of the polymeric shells, not by way of the broad expansive movement of teeth, as provided by the expansive force of the expansion member. The expansive movement is characterized further in paragraph 18, where the pressure of the appliance results in "expansion of the teeth and palatal arch *generally* ...." The expansion-associated movement is thus distinguished from the individualized repositioning that occurs by way of the repositioning of "teeth from one tooth arrangement to a successive tooth arrangement" that is associated specifically through the intervention of the polymeric shell, per paragraph 14.

Re "forming a geometry shaped": "geometry" occurs and is described extensively in paragraph 29. Geometry refers specifically to the whole of the fit of the plurality of cavities to the teeth of the patient.

Re "the plurality of cavities to resiliently reposition teeth from one tooth arrangement to a successive tooth arrangement": the phrase comes directly out of paragraph 14, as discussed above.

Re "on a periodic basis": See the final sentence of paragraph 6, used in context of adjusting the expander.

Re "while repositioning the teeth with a successive arrangement of the plurality of cavities": "repositioning of teeth ..." comes from paragraph 14, in speaking of the polymeric shell; "plurality of cavities" comes from paragraph 29 as above,

The new claims do include matter from the cancelled claims, but have been included as new claims rather than amended claims as they depend from independent claims that are significantly different than their previous respective independent claims. More specifically, the correspondence between cancelled claims and new claims is listed below:

new claim includes matter...	... from cancelled claim
35	3
36	4
37	5
38	6
41	6
42	7
43	8
44	25
45	29

**Claim Rejections - 35 USC 103(a)*****Re Examiner's Item 5. Claims 1 - 3, 22 - 27, and 29 - 33***

The examiner has rejected these referenced claims with assertion that they are unpatentable over Truax (U.S. 5,242,304) in view of Pavloskaia (U.S. 6,463,344).

All referenced claims have been cancelled. The remarks above, that reference new claims, distinguish the present application from Truax. Truax relates to arch expansion and associated and consequential general expansion of teeth on the arch. The present application relates to an appliance and associated method for arch expansion and the individualized movement of teeth, as accomplished by successive arrangement of the geometry of cavities in the polymeric shell.

As the referenced claims no longer include the "electronically viewable treatment plan", nor the "tool", these teachings of Pavloskaia no longer apply to the claimed invention. The claims do still include limitations related to 3-D models and compressing data, but inasmuch as the invention is distinguished from Truax in the independent claims, these teaching do not apply either.

***Re Examiner's Item 6. Claim 4***

The examiner has rejected these referenced claims with assertion that they are unpatentable over Truax in view of Pavloskaia (U.S. 6,463,344), and in further view of Williams (U.S. 5,769,631).

All referenced claims have been cancelled. The remarks above, that reference new claims, distinguish the present application from Truax. Truax relates to arch expansion and associated and consequential general expansion of teeth on the arch. The present application relates to an appliance and associated method for arch expansion and the individualized movement of teeth, as accomplished by successive arrangement of the geometry of cavities in the polymeric shell.

In addition to the content of remarks above related to Truax and Pavloskaia, the teaching of Williams regarding springs also do not apply to the claimed invention, inasmuch as the invention is distinguished from Truax and Pavloskaia.

**Re Examiner's Item 7. Claim 5**

The examiner has rejected these referenced claims with assertion that they are unpatentable over Truax in view of Pavloskaia (U.S. 6,463,344), and in further view of Tepper (U.S. 5,376,001).

All referenced claims have been cancelled. The remarks above, that reference new claims, distinguish the present application from Truax. Truax relates to arch expansion and associated and consequential general expansion of teeth on the arch. The present application relates to an appliance and associated method for arch expansion and the individualized movement of teeth, as accomplished by successive arrangement of the geometry of cavities in the polymeric shell.

In addition to the content of remarks above related to Truax and Pavloskaia, the teaching of Tepper regarding nitinol also do not apply to the claimed invention, inasmuch as the invention is distinguished from Truax and Pavloskaia.

**Response to Arguments and Conclusion**

In item 8, the examiner comments that the arguments filed by the applicant on 04/13/06 have been fully considered, but were not persuasive to her. She further comments that the applicant's amendment necessitated the new grounds of rejection presented in her response, and that the action has been made final. Applicants, as noted above, have cancelled claims to which her 112-related comments were directed.

Applicants respectfully request consideration of the current claims, which are directed to an "an appliance for expanding a palatal arch of a patient while repositioning teeth" (per new claim 34) and to "a method for expanding a palatal arch of a patient while repositioning teeth" (per claim 40).

**CONCLUSION**

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It is respectfully submitted that by the foregoing amendments and arguments, and by the amendments to the claims, all of the Examiner's rejections have been successfully traversed and that the application is now in order for allowance. Accordingly, reconsideration of the application and allowance thereof is courteously solicited.

Respectfully submitted,

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